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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,956	07/14/2003	Shalini Periyalwar	0583P40US02	4457

26123 7590 07/14/2006

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EXAMINER

NGUYEN, TU X

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/617,956	PERIYALWAR ET AL.	
	Examiner	Art Unit	
	Tu X. Nguyen	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 and 6 is/are allowed.
- 6) ☒ Claim(s) 4,5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed 5/30/06 have been fully considered but they are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter "date for scheduled transmission" which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 4-5, 7-9 and 13, are rejected under 35 U.S.C. 103(a) as being obvious over Schmutz (US Patent 6,718,160) in view of Matthews et al. (US Pub. 2002/0077151).

Regarding claim 4, Schmutz discloses an intelligent relay for use within a cellular network, said intelligent relay comprising:

- an uplink transmitter (see 29B, fig.4);
- an uplink receiver (see 29B; fig.4);
- a downlink transmitter (see 29A, fig.4);
- a downlink receiver (see 29A, fig.4); and
- a relay transfer buffer (see col.7 lines 19-20);

wherein said uplink transmitter and said uplink receiver operate simultaneously during uplink transmission and said downlink transmitter and said downlink receiver operate simultaneously during downlink transmission (see col.5 lines 18-31), and said relay transfer buffer operates to facilitate such simultaneous transmissions (see col.7 lines 19-30).

Schmutz fails to disclose scheduled transmission.

In an analogous art, relaying data for later transmission, Mathews et al. disclose packets are received and temporarily held in suspension until an appropriate communication channel is available for retransmission of the packets (see par.039). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Schmutz with the above teaching of Mathews in order to allocate the communication path and transmit the holding data when there is a available communication channel.

Regarding claims 5, the modified Schmutz discloses intelligent relay is sectorized (see Schmutz, col.4 lines 39-42) so as to minimize interference with base station transmissions.

Regarding claim 7, the modified Schmutz disclose intelligent relay is operable with a base station including a means for power control in coordination with rate control wherein said power control means provides for minimization of interference between base station (see Mathews, par.033, 068).

Regarding claim 13, Schmutz fails to disclose intelligent relay is operable with a base station including a means for power control in coordination with rate control wherein said power control means provides for minimization of interference between base station transmissions and relay transmissions by said uplink transmitter and said downlink transmitter.

Mathews discloses intelligent relay is operable with a base station including a means for power control in coordination with rate control wherein said power control means provides for minimization of interference between base station transmissions and relay transmissions by said uplink transmitter and said downlink transmitter (see par.033, 068). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Schmutz with the above teaching of Mathews in order to provide power management to improve overall performance of all individual channels and dynamically reconfigured to make efficient use of available frequencies to provide high or low data rates to support data throughput requirements.

Regarding claim 8, Schmutz fails to disclose including a scheduler for quality of service providing decisions on power, rate control, and relay time unit allotments.

Mathews discloses including a scheduler for quality of service providing decisions on power, rate control, and relay time unit allotments (see par.068, 074). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Schmutz with the above teaching of Mathews in order to provide the nanoCell base station operates similar to that of conventional mobile station such as prioritize quality of service, data rate transfer and power control transmission.

Regarding claim 9, the modified Schmutz discloses including more than one said intelligent relay each being locatable in overlapping areas of different beams, sectors, or cells (see Mathewa, par.003 and 074-76) able to communicate with multiple base station so as to provide load balancing and reduction of path vulnerability.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Schmutz (US Patent 6,718,160) in view of Matthews et al. (US Pub. 2002/0077151) and further in view of Tamaki et al. (US Pub. 2003/0124976).

Regarding claim 10, the modified Schmutz fail to disclose intelligent relay perform virtual MIMO transmissions.

In an analogous art, an improve selective diversity of reception and transmission of a repeater, Tamaki et al. disclose intelligent relay perform virtual MIMO transmissions (see par.014). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of the modified Schmutz with the above teaching of Tamaki et al. in order to provide a MIMO system in multipath transmission environment.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Schmutz (US Patent 6,718,160).

Regarding claim 11, Schmutz discloses an intelligent relay for use within a cellular network, said intelligent relay comprising:

an uplink transmitter (see 29B, fig.4); an uplink receiver (see 29B; fig.4);
a downlink transmitter (see 29A, fig.4); a downlink receiver (see 29A, fig.4); and
a relay transfer buffer (see col.7 lines 19-20);

wherein said uplink transmitter and said uplink receiver operate simultaneously during uplink transmission and said downlink transmitter and said downlink receiver operate simultaneously during downlink transmission (see col.5 lines 18-31), and said relay transfer buffer operates to facilitate such simultaneous transmissions (see col.7 lines 19-30), and said relay control channel operates to facilitate communication between said intelligent relay and a base station and between said intelligent relay and a user equipment element (see col.3 line 59 through col.6 line 43).

Regarding claim 11, Schmutz discloses intelligent relay is sectorized (see col.4 lines 39-42) so as to minimize interference with base station transmissions.

Allowable Subject Matter

7. Claims 1-3 and 6, are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 1, the prior arts fail to teach "selecting a pilot signal emanating from one of said base station or said more than one intelligent relays based upon strength of said pilot signal at said at least one user equipment element; reporting a strongest source of said pilot signal to said base station; distributing an active user list, scheduling information, and routing information among said more than one intelligent relays such that said at

least one user equipment element is assigned to a corresponding one of said more than one intelligent relays", as cited in the claim.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP


§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Nguyen whose telephone number is 571-272-7883. The examiner can normally be reached on Monday through Friday from 6:30AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


June 27, 2006


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